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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/734,122	12/15/2003	Meir Gordon	P-6307-US	4843

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PEARL COHEN ZEDEK LATZER, LLP  
1500 BROADWAY, 12TH FLOOR  
NEW YORK, NY 10036

EXAMINER

MILORD, MARCEAU

ART UNIT PAPER NUMBER

2618

DATE MAILED: 09/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/734,122

Applicant(s)

GORDON, MEIR

Examiner

Marceau Milord

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 20-29 is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1- 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fullerton et al (US Patent No 6937667 B1) in view of Aytur et al (US Patent No 7079869 B2).

Regarding claims 1-8, Fullerton et al discloses an apparatus (figs. 9, 15 and 17) comprising: three quarter-wavelength differential transmission lines to couple two differential input ports to two differential output ports in a first manner (col. 30, lines 1-31; col. 33, lines 40-58; col. 34, lines 56-67).

However, Fullerton et al does not specifically disclose the features of a quarter-wavelength differential transmission line to couple one of said two differential input ports to one of said two differential output ports in a second, different manner.

On the other hand, Aytur et al, from the same field of endeavor, discloses a radio frequency module for use in a communication device of a communication system includes

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integrated RF circuitry comprising at least one of a transmitter and a receiver, and an antenna element having at least one portion thereof arranged substantially adjacent to and operatively coupled to the integrated RF circuitry. In addition, the multi-module transmitter includes N transmitter modules where each coupled to a common local oscillator. Each of the N transmitter modules includes integrated RF circuitry (col. 2, lines 25-49). The transmitter includes a first input adapted to receive an oscillator signal from the local oscillator and a second input adapted to receive an RF phase signal. The transmitter further includes additional inputs adapted to receive baseband signals from baseband circuitry. More specifically, these additional inputs include a first differential input adapted to receive an in-phase signal from the baseband circuitry, and a second differential input adapted to receive a quadrature-phase signal from the baseband circuitry (col. 4, lines 31-43; col. 6, lines 39-61; col. 7, lines 24-61). The transmitter also generates one or more output signals. Furthermore, the length of a given radiating patch may be a quarter-wavelength (col. 8, lines 10-41). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Aytur to the communication system of Fullerton in order to provide a plurality of modules that can be used to implement a transceiver in a communication system.

Regarding claims 9-16, Fullerton et al discloses an apparatus (fig. 7; figs. 9, 15 and 17) comprising: a first group of six reactive elements to couple two differential input ports to two differential output ports in a first manner; a second group of two reactive elements to couple one of said two differential input ports to one of said two differential output ports in a second, different manner (col. 30, lines 1-31; col. 33, lines 40-58; col. 34, lines 56-67).

However, Fullerton et al does not specifically disclose the features of a third group of four reactive elements, each to couple a positive terminal and a negative terminal of a respective one of said two differential input ports and said two differential output ports.

On the other hand, Aytur et al, from the same field of endeavor, discloses a radio frequency module for use in a communication device of a communication system includes integrated RF circuitry comprising at least one of a transmitter and a receiver, and an antenna element having at least one portion thereof arranged substantially adjacent to and operatively coupled to the integrated RF circuitry. In addition, the multi-module transmitter includes N transmitter modules where each coupled to a common local oscillator. Each of the N transmitter modules includes integrated RF circuitry (col. 2, lines 25-49). The transmitter includes a first input adapted to receive an oscillator signal from the local oscillator and a second input adapted to receive an RF phase signal. The transmitter further includes additional inputs adapted to receive baseband signals from baseband circuitry. More specifically, these additional inputs include a first differential input adapted to receive an in-phase signal from the baseband circuitry, and a second differential input adapted to receive a quadrature-phase signal from the baseband circuitry (col. 4, lines 31-43; col. 6, lines 39-61; col. 7, lines 24-61). The transmitter also generates one or more output signals. Furthermore, the length of a given radiating patch may be a quarter-wavelength (col. 8, lines 10-41). The transmitter modules are arranged in groups of three modules as shown, with the modules in a given group being shifted horizontally relative to one another by a distance corresponding to approximately one quarter-wavelength or 90 degree (figs. 6A and 6B; col. 9, lines 50-67; col. 11, line 42- col. 12, line 30). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the

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technique of Aytur to the communication system of Fullerton in order to provide a plurality of modules that can be used to implement a transceiver in a communication system.

Regarding claims 17-19, Fullerton et al discloses a communication device (fig. 7;figs. 9, 15 and 17) comprising: a dipole antenna; a power amplifier coupled to said dipole antenna; and a combiner coupled to said power amplifier, wherein said combiner includes at least: three quarter-wavelength differential transmission lines to couple two differential input ports to two differential output ports in a first manner (col. 30, lines 1-31;col. 33, lines 40-58; col. 34, lines 56-67).

However, Fullerton et al does not specifically disclose the features of a quarter-wavelength differential transmission line to couple one of said two differential input ports to one of said two differential output ports in a second, different manner.

On the other hand, Aytur et al, from the same field of endeavor, discloses a radio frequency module for use in a communication device of a communication system includes integrated RF circuitry comprising at least one of a transmitter and a receiver, and an antenna element having at least one portion thereof arranged substantially adjacent to and operatively coupled to the integrated RF circuitry. In addition, the multi-module transmitter includes N transmitter modules where each coupled to a common local oscillator. Each of the N transmitter modules includes integrated RF circuitry (col. 2, lines 25-49). The transmitter includes a first input adapted to receive an oscillator signal from the local oscillator and a second input adapted to receive an RF phase signal. The transmitter further includes additional inputs adapted to receive baseband signals from baseband circuitry. More specifically, these additional inputs include a first differential input adapted to receive an in-phase signal from the baseband

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circuitry, and a second differential input adapted to receive a quadrature-phase signal from the baseband circuitry (col. 4, lines 31-43; col. 6, lines 39-61; col. 7, lines 24-61). The transmitter also generates one or more output signals. Furthermore, the length of a given radiating patch may be a quarter-wavelength (col. 8, lines 10-41). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Aytur to the communication system of Fullerton in order to provide a plurality of modules that can be used to implement a transceiver in a communication system.

***Allowable Subject Matter***

3. Claims 20-29 are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marceau Milord whose telephone number is 571-272-7853. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew D. Anderson can be reached on 571-272-4177. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MARCEAU MILORD

Marceau Milord  
Primary Examiner  
Art Unit 2618

*MMilord*  
MARCEAU MILORD  
PRIMARY EXAMINER

*9-21-06*